

## ABSTRACT OF THE DISCLOSURE

### ADAPTING POLYMORPHIC INLINE CACHES FOR MULTITHREADED COMPUTING

5 A method and computer system that implements polymorphic inline caches having locking slots. Of a polymorphic dispatch, each time the polymorphic method is called having a new object type, a new slot in the polymorphic inline cache is created. By comparing the object types of new methods with object type values already in the cache, it can readily be determined if a new slot has to be created to accommodate a new object type. Preferably, if two threads wish to access the polymorphic inline cache at the same time, the second thread will wait until the first thread accesses and creates and/or uses its slot because it is likely that the second thread will call the method of the same type. Alternatively, however, the second thread may access and create and/or use another slot of the polymorphic inline cache because the first slot is locked to all objects other than its type. If the threads wish to access the same slot of the polymorphic inline cache, then the first thread may lock and modify the slot to call the method while the second thread may just call the method without modifying the slot. A just-in-time compiler may be used to create the polymorphic inline cache described within, but once created, the polymorphic cache may be exported to and used in other computer systems not having a just-in-time compiler including embedded devices such as mobile computing devices.

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